

USSR

UDC: 621.317.335.3

POYARKOVA, V. Ye., ZAL'TSMAN, Ye. B.

"A Method of Measuring the Permittivity of Thin Dielectric Sheet Materials"

Tr. VNIi fiz.-tekhn. i radiotekhn. izmereniy (Works of the All-Union Scientific Research Institute of Physicotechnical and Radio Engineering Measurements), 1970, vyp. 2(32), pp 237-248 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5A241)

Translation: Experimentally substantiated recommendations are given on use of the resonator method for measuring the permittivity of specimens in the shape of a disc with less than half-wave thickness. In order to eliminate errors due to residual gap, it is recommended that the permittivity of such specimens be measured under no-load or peak conditions. Methods of realizing these conditions are indicated. Formulas are given for calculating loss tangents measured by the method of transmission under no-load and peak conditions. Three illustrations, bibliography of four titles. Resumé.

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UDC: 621.317.335.3

FOYARKOVA, V. Ye., ZAL'TSMAN, Ye. B.

"On the Effect Which Deformation of Dielectric Specimens has on the Accuracy of Measuring Permittivity on Superhigh Frequencies"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 1 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 1), Novosibirsk, 1970, pp 105-107 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A361)

Translation: The additional error caused by deformation of dielectric specimens is estimated for the simplest forms of deformation of disc specimens when they take the form of a lens: concavo-convex, plano-convex, etc. It was found from these investigations that no-load or antinode conditions should be used for measuring permittivity. The condition under which deformation does not yet noticeably reduce the Q of a resonator is found and evaluated. In order to minimize error, formulas are found which should be used in calculating the effective thickness of deformed specimens. Bibliography of one title. E. L.

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UDC: 539.385

IVANOVA, V.S., TEREENT'YEV, V.F. and POYDA, V.G., Institute of Metallurgy imeni A.A. Baykov, Academy of Sciences USSR

"Community of Nature of Both Fatigue Limits and Physical Yield Points"

Moscow, Sb. "Ustalost' metallov i splavov". "Nauka" Press, 1971, pp 15-23

Translation: Discussed is a hypothesis explaining the community of nature of both physical fatigue limits and physical yield points. To analyze the relation between these phenomena, use was made of the kinetics of changes in the yield area during the cyclic loading (repeated stretching at loading frequency of 2800 cycles/minute of flat specimens from St.3 steel. It is shown that cyclic loading, after a certain incubation period, results in the disappearance of the yield tooth and gradual elimination of the yield area on the static stretch curve. Based on the derived data, it is suggested that determination of the physical fatigue limit (by analogy with the

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IVANOVA, V. S., et al., "Community of Nature of Both Fatigue Limits and Physical Yield Points", Sb. "Ustalost' metallov i splavov", 1971, pp 15-23

physical yield point) is governed by the formation (during cyclic loading) of a hardened surface shell of the thickness of the grain. The fatigue limit conforms to a stress which fails to cause microcracks of critical length in the hardened surface layer. This shell serves as a barrier to the escape of dislocations from the inner layers of the metal and thus hinders the generation of irreversible damage. (4 illustrations, 33 bibliographic references; summary).

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UDC: 539.385

TERENT' YEV, V.F., MAKHUTOV, N.A., POYDA, V.G. and SHCHERBAK, A.M., Institute of Metallurgy imeni A.A. Baykov, Academy of Sciences USSR

"Influence of Surface Layers and Aging on Bauschinger Effect During Low-Cycle Loading"

Moscow, Sb. "Ustalost' metallov i splavov". "Nauka" Press, 1971, pp 41-48

Translation: This study concerns the influence of removing a grain-size thick surface layer (following the first half-cycle of loading) as well as intermediate aging at 270°C for 2 hours on the Bauschinger effect in low-carbon St.3 steel. It is shown that the Bauschinger effect in low-carbon steel is largely due to the presence of a much stronger grain-size thick surface layer as well as surface residual stresses. Removal of the surface layer after the first half-cycle of loading (in the stretch region) or aging after the first half cycle minimizes the Bauschinger effect. In both cases the decrease in Bauschinger effect is, most likely, related to the marked decrease in surface residual stresses. (6 illustrations, 18 bibliographic references; summary).

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1/2 025 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--EFFECT OF AGING AND COLD WORKING ON THE RESISTANCE OF STRUCTURAL
STEELS TO PLASTIC DEFORMATION DURING LOW CYCLE LOAD -U-
AUTHOR--MAKHUTOV, N.A., SHCHERBAK, A.M., POYDA, V.G., TERENTYEV, V.F.
COUNTRY OF INFO--USSR
SOURCE--PROBL. PROCH. 1970, (1), 42-5
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--METAL AGING, COLD WORKING, LOW ALLOY STEEL, STRUCTURAL STEEL,
METAL DEFORMATION/(U)22K LOW ALLOY STEEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1984/1408 STEP NO--UR/3663/70/000/001/0042/0045
CIRC ACCESSION NO--AT0100068
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AT0100068

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WITH MOST METALS THE BAUSCHINGER EFFECT IS SHOWN IN A RADICALLY DECREASING PLASTICITY IN THE 1ST CYCLE UPON REVERSAL FROM TENSION TO COMPRESSION. THE KNOWN REON. OF THIS EFFECT BY DEFORMATION AND AGING WAS REEXPLORED WITH BOILER STEEL 22K (C 0.3, SI 0.26, MN 0.80, NI 0.20, CR 0.12, CU 0.015PERCENT) AND LOW C STEEL DEFORMED AT 0.5-10.0PERCENT THEN AGED FOR 2 HR-270DEGREES. APPLIED FORCE, SIGMA SUBA LARGER THAN SIGMA SUBT, THE ELASTIC LIMIT, IN THE RELATION FOR THE MEAN YIELD STRENGTH, BAR SIGMA, HAD THE USUAL SHARP LINEAR DROP TO ZERO TENSION ELASTICITY, FOLLOWED DURING THE COMPRESSION BY A PARABOLIC DECLINE TO A LOWER ELASTICITY VALUE THAN INITIALLY, IN ITS SIGMA SUBT PRIME CURVE. INITIALLY THE METAL HAD A SIGMA SUBT PRIME VALUE OF 30.8 KG-MM PRIME², BUT AFTER DEFORMATION BY 0.5, 2.0, 5.0, AND 10.0PERCENT AND AGING 31.8, 37.2, 46.0, AND 52.0 KG-MM PRIME². WITH BAR SIGMA EQUALS 1.17, 1.32, 1.46, 1.61, AND 1.71, SIGMA SUBT PRIME RANGED DOWN 7.1-3.55, 26.0-3.55, 26.9-7.8, AND 28.3-21., KG-MM PRIME², RESP., FOR EACH DEFORMED TYPE. THE PHENOMENA WAS ATTRIBUTED TO THE EASE OF BLOCKING OF DISLOCATIONS: AND AS WITH 22K STEEL SIGMA SUBT PRIME BECAME STABILIZED AFTER 5-7 TOTAL CYCLES OR LESS FOR BAR SIGMA EQUALS 1.61. SIMILARLY, THE REMOVAL OF DISLOCATIONS (AND PLASTICITY) AFTER AGING AT 400DEGREES CAUSED REMOVAL OF THE BAUSCHINGER EFFECT; OR SOME REON. IF AFTER DEFORMATION, A SURFACE LAYER WAS REMOVED ELECTROLYTICALLY.

UNCLASSIFIED

USSR

UDC: 8.74

CHEGOLIN, P. M., POYDA, V. N.

"Methods, Algorithms and Programs of Statistical Analysis"

Metody, algoritmy i programy statisticheskogo analiza (cf. English above), Minsk, "Nauka i tekhn.", 1971, 224 pp, ill. 1 r. 26 k. (from RZh-Kiber-netika, No 1, Jan 72, Abstract No 1V1032)

Translation: The book deals with the problem of experiment automation based on use of electronic computer technology. The authors consider problems of automatic computation of statistical characteristics with regard to effective methods of condensing primary information and the measure of nonlinearity of the objects being studied.

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1/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--INDUSTRIAL ADOPTION OF A ZINC ABSORBER FOR THE THOROUGH REMOVAL OF
HYDROGEN SULFIDE FROM HYDROCARBON GASES -U-
AUTHOR--(02)-POYEZO, D.F., SILIN, N.G. P
COUNTRY OF INFO--USSR
SOURCE--NEFTEPERAB, NEFTEKHIM. (MOSCOW) 1970, (5), 33-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--HYDROGEN SULFIDE, ZINC, GAS ADSORPTION, KAOLIN, PELLETIZATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/1085 STEP NO--UR/0318/70/000/005/0033/0035
CIRC ACCESSION NO--AP0134774
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0134774

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. KAOLIN (1 PART) WAS MIXED WITH 10 PARTS TECH. ZNO AND THEN WITH WATER AND NH₃ SOLN., PELLETTED (6-10 MM), AND DRIED IN AIR AND THEN IN N. THE ABSORBER HAD GOOD EFFICIENCY AND HIGHER MECH. STRENGTH THAN THE TABLETTED PRODUCT.

UNCLASSIFIED

USSR

UDC 678.746.45.01:537.226

TROSTYANSKAYA, YE. B., BEL'NIK, A. R., CHERNIKOVA, O. D., and POYMANOV, A. M.,
Moscow Aviation Technology Institute

"Causes of Resite Property Changes in Aqueous and Alkaline Media"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 9, No 2, 1973, pp 37-40

Abstract: The degree of effect of low-molecular polar impurities on the properties of resite was investigated by comparing the characteristics of the initial material with its characteristics after extended aqueous extraction at room temperature. Equilibrium sorption, coefficient of diffusion, dielectric loss, and modulus of elasticity of the resite were measured for different degrees of relative humidity. With increased relative humidity and in water the effect of resite plastification by the absorbed water is spanned by swelling stresses. The presence of low-molecular polar impurities in the resite leads to a sharp growth of swelling stresses and dielectric losses while the strain on the polymeric lattice and volume of absorbed water vapor are lowered. Resite breakdown in aqueous solutions of an alkali occurs under the action of swelling stresses which grow sharply as a result of increased hydrophilicity from replacement of hydrogen in the phenol chains by metal ions. 3 figures, 1 table, 11 bibliographic references.

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172 031

UNCLASSIFIED

PROCESSING DATE--0270CT70

TITLE--CHANGE IN THE STRUCTURE AND PROPERTIES OF HARDENED RESINS UNDER THE INFLUENCE OF A FILLER. 2. INFLUENCE OF A FILLER ON THE INTERACTION

AUTHOR--(04)-POYMANOV, A.M., TROSTYANSKAYA, YE.B., NOSOV, YE.F., BELNIK, A.R.

COUNTRY OF INFO--USSR

P

SOURCE--MEKH. POLIM. 1970, 6(1), 54-8

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--FILLER, EPOXY RESIN, MECHANICAL STRENGTH, PRESSURE EFFECT, ENTROPY, THERMAL EXPANSION, ELASTIC MODULUS, COMPRESSIVE STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1992/1899

STEP NO--UR/0374/70/006/001/0054/0053

CIRC ACCESSION NO--AP0112879

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0112879

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INCREASE IN THE MECH. STRENGTH OF EPOXY RESINS (I) CAUSED BY THE ADDN. OF FILLERS (QUARTZ OR GLASS POWDERS) WAS CORRELATED WITH THE INCREASE OF THE INTERNAL PRESSURE (P SUBINT) OF THE SYSTEM. P SUBINT EQUAL (DELTA U-DELTA V) SUBT AND CONFORMS TO THE THERMODYNAMIC RELATION: P EQUALS T (DELTA S-DELTA V) SUBT-P SUBINT (WHERE P, T, V, S, AND U ARE, RESP., EXTERNAL PRESSURE, TEMP., VOL. ENTROPY, AND INTERNAL ENERGY). ALSO P SUBINT EQUALS T ALPHA K-P (ALPHA IS THE THERMAL EXPANSION COEFF. AND K IS THE VOL. ELASTICITY MODULUS, BOTH BEING DETERMINABLE EXPTL.) AND THUS IT CAN BE DETD. BY EXPT. IT WAS SHOWN THAT THE COMPRESSION STRENGTH OF FILLED I INCREASES LINEARLY WITH THE INCREASE IN P SUBINT AND THE AMT. OF THE FILLER.

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--02OCT70

TITLE--EXPERIMENTAL AND MORPHOLOGICAL EVALUATION OF COPOLYMER ON THE BASIS OF METHYLMETACRYLATE AND RUBBER PROPOSED AS BASIS MATERIAL FOR THE

AUTHOR--(04)-PANIKAROVSKIY, V.V., YAGUDIN, A.D., PASHININ, B.P., POYUROVSKAYA, I.YA.

COUNTRY OF INFO--USSR

SOURCE--STOMATOLOGIYA, 1970, VOL 49, NR 2, PP 57-60

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DENTISTRY, PROSTHESIS, METHYL METHACRYLATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/0328

STEP NO--UR/0511/70/049/002/0057/0060

CIRC ACCESSION NO--AP0102790

UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0102790

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SUMMARY. THE AUTHORS STUDIED REACTION OF THE ANIMAL TISSUES ON THE IMPLANTED SAMPLES OF COPOLYMER ON THE BASIS OF METHYLMETACRYLATE AND RUBBER. IT WAS ESTABLISHED THE INDIFFERENCE OF THE REFERRED TO COPOLYMER IN RESPECT TO THE TISSUES OF ANIMALS, THIS MAKING IT POSSIBLE TO USE THIS MATERIAL AS A BASIS FOR THE PREPARATION OF REMOVABLE PLATE DENTAL PROSTHESES.

UNCLASSIFIED

USSR

BARYKIN, N. P., POYUROVSKIY, Yu. V., NIKOLAYEV, V. A., VASHURIN, A. M.,
PLEKHOV, V. A.

"Calculation of Thermoelastic Stresses During Cooling of Stamps at Various Rates"

Tr. Ufim. Aviats. In-t. [Works of Ufim Aviation Institute], 1971, No 25, pp 111-119, (Translated from Referativnyy Zhurnal, Mekhanika, No 10, 1972, Abstract No 10 V43, by N. T. Glazunova).

Translation: This article presents results of theoretical and experimental studies of the stress field in heated, hollow, thickwall, long cylinders cooled in various media. Axisymmetrical distribution of temperature in the cross section is assumed. The temperature field along the cylinder is assumed constant. Under these conditions, the temperature and corresponding stress field in the body in the radial direction are described by certain logarithmic rules. For long bodies of rectangular cross section, the author's recommend that the actual contour be replaced by an equivalent cylinder, with the condition of equality of areas of side surfaces. The results of the study are illustrated by graphs of temperature stresses in cylindrical stamps of type 5KhNV steel, cooled in oil and in air. 8

Biblio. Refs.
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USSR

POYZNER, B. N.

UDC 621.373.029.7

"Change in the Spectrum of a Multiple-Frequency Gas Laser Under the Effect of a Light Signal"

Moscow, Radiotekhnika i Elektronika, Vol 16, No 10, Oct 71, pp 1853-1857

Abstract: The author analyzes the change in the emission spectrum of a gas laser with five modes of emission as treated in the standing-wave approximation when acted on by a small parametric signal which covers the frequency of one of the laser modes. The analysis leads to a system of differential equations for the amplitudes and phases of the laser modes reflecting the influence of combination tones on the dynamics of a gas laser. It is shown that in the case of intense combination tones, the frequency of the mode covered by the external signal may be shifted, leading to phase synchronization of all modes accompanied by the formation of an equidistant spectrum if the amplitude of the external signal exceeds the synchronization threshold. For the case of weak influence of combination

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POYZNER, B. N., Radiotekhnika i Elektronika, Vol 16, No 10, Oct 71, pp 1853-1857

tones on the conditions of gas laser emission, curves are plotted which show the predominance of the spectrum induced by an increase in the amplitude of the external signal or a shift in its frequency: broadening of the spectrum, reduction in its density, etc. Thus the spectrum of a gas laser can be controlled by a light signal. The results agree with the data found by other experimenters for multiple-frequency lasers and masers. The author thanks E. S. Vorobeychikov for assistance with the work. Two figures, bibliography of eighteen titles.

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POYZNER, B. N.

UDC: 621.385.623.15

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"Experimental Study on the Behavior of a Klystron in a Multifrequency System and Under the Effect of an External Signal"

Moscow, Radiotekhnika i Elektronika, Vol. 15, No 6, 1970, pp 1196-1199

Abstract: Since experiments with lasers present difficulties, the author studied a reflex klystron coupled to a long waveguide with the aim of explaining changes in the oscillation spectrum of a klystron generator in a multifrequency system evoked by a harmonic, super-high frequency signal whose frequencies may take on any values within the limits of the spectrum. A possibility is shown for synchronizing all types of oscillations of the system provided that the frequency of the external signal is close to that of some type of oscillation or lies at a distance of 2-3 inter-range intervals beyond the limits of the generated spectrum. Depending on the power of the external signal and the departure of the synchronized type of oscillations from the central, the spectrum changes due to power increase of one type and decrease of other types of oscillations while maintaining their overall number. At the same time, secondary peripheral types of oscillations may arise and a part of these or all are damped. If the frequency of a sufficiently intense external signal is near the average frequency of the nearest type of oscillations, then all the components of the spectrum can be synchronized. Amplitude-frequency

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POYZNER, B. N., Radiotekhnika i Elektronika, Vol 15, No 5, 1970, pp 1197-1199

characteristics are given for various types of oscillations. Original article:
four figures, one table, and five bibliographic entries.

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USSR

UDC 538.56.01+621.38.029.64

VOROBAYCHIKOV, E. S., KIREYEV, A. M., KORCHAGIN, YU. A., POYZNER, B. N.

"Non-Autonomic Operation of a Reflex Klystron"

Kiev, Izvestiya VUZ -- Radioelektronika, Vol 13, No 8, 1970, pp 923-933

Abstract: The object of this paper is to demonstrate the merit of proving that multifrequency uhf oscillators are possible, comparing them with lasers, and explaining the characteristics of their non-autonomic operation. The authors begin by considering a device consisting of a reflex klystron connected to a waveguide line, and obtain the equations for the amplitudes and frequencies of the oscillations produced by the device. Since the equations they derive are of the same form as those of the gas laser, there is a definite analogy between multifrequency oscillation systems in the optical and uhf ranges. A table is presented listing the comparative aspects of the klystron and the helium-neon laser. The non-autonomous operation of the klystron is investigated by generalizing the known results of laser analysis, and an experiment for checking the findings of this investigation is described. The results of the experiment agree closely with the results obtained from theory.

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USSR

UDC 538.56.01:621.38.029.64

VOROBAYCHIKOV, E. S., KORCHAGIN, Yu. A., PGYZNER, B. N.

"The Behavior of a Multifrequency Klystron Generator Under the Action of a Small Superhigh-Frequency Signal"

Izvestiya Vysshikh Uchebnykh Zavedeniy Fizika, No 6, 1970, pp 44-48

Abstract: A study is made of the operation of a multifrequency generator: namely, a reflex klystron, coupled to a wave-guide line. Its behavior is described by a system of second-order equations for voltages, the right-hand part of which is determined by induced current which is a nonlinear function of the sum of voltages of many frequencies at the electronic gap. The solution of these equations results in equations which coincide in structure with the equations of a gas laser. The conclusions concerning the spectrum transformation of a multifrequency klystron under the action of an external signal are qualitatively confirmed by experiment.

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USSR

UDC 539.376+532.135

LOBODOV, V. V., POZDEYEV, A. A., PODGAYETS, R. M.

"Stress Relaxation in a Hollow, Nonlinear, Viscoelastic Cylinder with Displacements Fixed at the Contour"

Sb. Nauch. tr. Perm. Politekhn. In-t. [Collected Scientific Works of Perm Polytechnical Institute], No 102, 1971, pp 143-150, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 V565 by L. Kh. Papernik).

Translation: The problem of the stress state of an infinite hollow cylinder of a viscoelastic material loaded around the external contour by fixed radial displacements is studied. The defining equation used is a nonlinear heredity relationship similar to the equation of Rabotnov

$$\epsilon(t) = \phi[\sigma(t)] + \int_0^t K(t-s) \phi[\sigma(s)] ds,$$

which is used for the case of a complex stress state in the form used in the deformation theory of plasticity, and relates the intensity of shear stresses and strains. The function of "instantaneous" loading $\phi(\sigma)$ selected is a special form of exponential function, dependent on the maximum shear stress

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UDC 539.376+532.135

LOBODOV, V. V., POZDEYEV, A. A., PODGAYETS, R. M., Sb. Nauch. tr. Perm. Politekh. In-t., No 102, 1971, pp 143-150.

intensity. The variational principle of the minimum addition of energy is used to produce the solution. An approximate numerical solution is produced by the method of local variations and for comparison, an analytic solution by the Ritz method is produced. The known solutions of the elastic problem of Lamé and the problem for rigid plastic bodies are used as coordinate functions in the Ritz method. In the solutions by both methods, the form of the kernel $K(t - s)$ was not specified, but in the numerical example analyzed, the resolvent of the kernel is selected as the sum of two exponents. For the kernel selected in both cases, the distributions of radial and tangential stresses with respect to the thickness of the cylinder wall, changing with time, are calculated. 6 Biblio. Refs.

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USSR

UDC 599.376+592.135

KUZNETSOV, G. B., POZDEYEV, A. A.

"Characteristics of the Deformation of Low-Modular Polymer Materials"

Sb. nauch. tr. Perm. politekhn. in-t (Collection of Scientific Works. Perm' Polytechnical Institute), 1971, No. 98, pp 82-87 (from RZh-Mekhanika, No 3, Mar 72, Abstract No 3V699)

Translation: An attempt is made to evaluate the applicability of a certain nonlinear equation to describe the deformation properties of actual polymer materials. The equation is a combination of the Rabotnov and the Liderman-Rozovski equations

$$\varphi[\varepsilon(t)] = \psi[\sigma(t)] + \int_0^t K(t-\tau)\psi[\sigma(\tau)]d\tau$$

where the functions ϕ , ψ and the kernel of K are chosen in the following form: $\phi(\varepsilon) = \varepsilon/(\varepsilon + B)$, $\psi(\sigma) = \sigma/(\sigma + \gamma)$, $K(z) = A(1 - \lambda)/z^\lambda$. B , γ , A and λ are constants. It is shown, as one would expect, that the given equation qualitatively describes the experimentally observed characteristics of the deformation of polymer materials in linear and nonlinear regions under various test regimes

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KUZNETSOV, G. B., POZDEYEV, A. A., Sb. nauch. tr. Perm. politekhn. in-t, 1971,
No. 98, pp 82-87

(creep, stress relaxation, σ - ϵ diagrams). The hypothesis is made relative to the functions ϕ and ψ and similar to the Bronskiy hypothesis of the applicability of these functions to linear hereditary media, i.e., it is proposed that the following equality is valid for conditions of relaxation of stresses and creep

$$\psi[\sigma(t)]\phi[\epsilon(t)] = \psi(\sigma_0)\phi(\epsilon_0)$$

where the functions $\phi(\epsilon_0)$ and $\psi(\sigma_0)$ refer to the time $t = 0$. 5 ref. I. M. Kershteyn.

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USSR

UDC 539.376+532.135

POZDEYEV, A. A., SHAKNROV, N. V.

"A Version of Elastic Recovery of Calendered Viscous-Elastic Materials"

Sb. nauch. tr. Perm. politekhn. in-t (Collection of Scientific Works of Perm' Polytechnic Institute), 1972, No 112, pp 62-67 (from RZh--Mekhanika, No 6, Jun 73, Abstract No 6V501)

Translation: A study was made of the process of plane strain during rolling of an incompressible viscous-elastic material between rigid rolls turning with a constant angular velocity. The equations of the nonlinear hereditary theory of Rabotnov

$$\sigma_{ij} = -\sigma\delta_{ij} + 2 \frac{T}{H} \xi_{ij}$$

$$T = \phi(H) + \int_0^t \phi(H)R(t - \tau)d\tau$$

are used as the defining equations, where σ_{ij} is the stress tensor, ξ_{ij} is the strain rate tensor, T and H are the intensities of the shear and the deformation rates. The kernel of the integral equation R(t) was selected in the form of $1/2$

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POZDEYEV, A. A., et al. , Sb. nauch. tr. Perm. politekhn. in-t, 1972, No 112, pp 62-67

the sum of the exponents, the function of the instantaneous loading ϕ can also be of the exponential type or in the form of a power function. On the basis of the hypothesis of two-dimensional cross sections, from the equilibrium equations, formulas were obtained which define the stressed state in the lag and lead zones and also the equation for determining the magnitude of the deformation of the elastic aftereffect characterizing the variation of the gage of the sheet after leaving the gap. This equation takes into account the rolling rate and certain geometric factors. An example is presented of the numerical calculation on a computer of the magnitude of the deformation of the elastic aftereffect for certain values of the rheologic parameters, the rolling rates and the magnitude of reduction. The bibliography has 5 entries.

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USSR

UDC 620.10

POZDEYEV, A. A. and MEDVEDEV, A. A.

"Plastic Instability of Noncompressible Hollow Cylinder Loaded with Axial Force, External and Internal Pressure"

Moscow, Izv. VUZOV, Mashinostroyeniye, No 12, pp 61-67

Abstract: The existing solution of the problem of plastic instability of thin walled cylinders loaded with internal pressure and axial force is extended to hollow cylinders. Proof is provided by the deformation theory of plasticity. From the condition of the maximum of internal pressure, a transcendental equation is produced, defining a certain parameter x in the moment of instability characterizing the ratio of diameters of the cylinder. This value of x defines the existing deformation and pressure, represented in the form of a rapidly converging series. The solution produced will be realized in practice whenever the intensity of deformation of the cylinder, at the moment of loss of stability, does not exceed e_p of the material. The opposite situation can appear only in the materials with comparatively high indices, when the stability loss deformation becomes essential. This article does not present a solution for cylinders of such materials, since the solution will be easily produced by analogy with the solution presented.

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USSR

UDC:669.187.5

ZAYTSEV, B. Ye., GOTIN, V. N., SHCHERBAKOV, A. I., SERGYEV, A. B., ZHITKOV, N. K., OKOROKOV, G. N., BOYARSHINOV, V. A., TULIN, N. A., VOYNOVSKIY, Ye. V., TOPILIN, V. V., BOZDEYEV, N. P., SHALIMOV, Al. G., OSIPOVA, L. A., CHERNOV, Yu. V., and RAZANOV, T. S.

"Specifics of Vacuum Arc Remelting of Nickel-Based Alloys and Stainless Steels With Reverse Arc Polarity"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 181-183

Translation: Results are presented from a study of vacuum arc remelting of nickel alloys in a crystallizer 380-480 mm in diameter with thermocouples calked in length and height. The rate of melting with reverse polarity is 20% higher with identical bath depth of liquid metal. This is a result of more intensive heat transfer from the walls of the crystallizer during melting with reverse polarity. The macrostructure, chemical composition N, O, H and mechanical properties of the metal produced by melting with forward and reverse polarity are identical. The ingot produced with reverse polarity had no corona. 2 figures; 1 table; 1 biblio. ref.

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USSR

UDC 534

LIN'KOV, R. V., POZDEYEV, O. D.

"Damping and Excitation Conditions of Transverse Oscillations of a Body Suspended Magnetically"

V sb. Konf. po kolebaniyam mekh. sistem. Tezisy dokl. (Conference on Vibrations of Mechanical Systems. Topics of Reports--collection of works), Kiev, Naukova Dumka Press, 1971, p 58 (from RZh-Mekhanika, No 11, Nov 71, Abstract No 11A150)

Translation: A study was made of the stability of a body hung from a single-shaft magnetic suspension and having three degrees of freedom in the absence of dissipative forces and damping of the transverse oscillations.

The sufficient conditions of Lyapunov stability and instability of the state of equilibrium are found. It is demonstrated that stability is determined by the sensitivity of the suspension sensor to the transverse oscillations and the characteristics of the ponderomotive force acting on the body.

It was established that on satisfaction of the stability conditions, asymptotic stability exists for a suspension of different rigidity and nonasymptotic stability for an axisymmetric suspension. Here, circular oscillations of the body are set up in the suspension the amplitude of which depends on the initial conditions. A comparison is made with the experimental results.

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USSR

UDC: 621.318.124:621.318.134:621.762.34

POZDNEV, V. D., SAMARTSEVA, T. A.

"A Method of Making Laminar Ferrite Components"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obrazttsy, Tovarnyye Znaki, No 30, 1970, Soviet Patent No 282539, Class 21, 31, filed 24 Jun 68, p 85

Abstract: This Author's Certificate introduces: 1. A method of making laminar ferrite components by preparing a conducting paste for the conductors and a ferrite slip, forming a ferrite central layer and ferrite layers with conductors of the conductive paste and the ferrite slip, assembling a matrix from these layers, and pressing and baking the resultant matrix. As a distinguishing feature of the patent, the procedure is designed to produce strong adhesion between the conductors and ferrite and to improve the quality of laminar ferrite components while simultaneously simplifying the technological process. To this end, the conductive paste and the ferrite slip are prepared with the same binder. 2. A modification of this method with the distinguishing feature that an aqueous solution of glycerin-softened polyvinyl alcohol is used as the binder.

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USSR

UDC 576.8.06:678.026.3

PIMENOVA, M. N., PAVLOVA, V. G., and POZDNEVA, N. I., Moscow State University
"Effect of Microorganisms on Polyethylene Insulating Coatings"

Moscow, Biologicheskiye Nauki, No 6, 1973, pp 97-100

Abstract: Spray coatings made of polyethylene, stabilizers, and fillers were tested for their ability to resist fungal and microbial corrosion when used on pipelines. No fungous growth was observed on a mineral medium in the presence of samples of the material. On wort-agar, the mycelia of certain fungi, especially *Spicaria*, *Fusarium*, and *Aspergillus* completely covered some of the samples. But the size of the contact angle of wetting did not change, suggesting that the properties of the coating surface were not affected. The samples were also resistant to desulfating, denitrifying and hydrocarbon-oxidizing bacteria, except the coatings containing such fillers as Cr_2O_3 and silica flour. It is suggested that the contact angle of wetting be determined when evaluating changes in the properties of the surface of polyethylene coatings before and after exposure to microorganisms.

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USSR

UDC: 621.791.3

POZDEYEVA, N. V., CHIBIREVA, V. A., METELKIN, I. I., KOVALEVSKIY, R. Ye.,
PERSHINA, L. K., Moscow

"Soldering of Metallized High-Alumina Ceramics with Metals by Means of Copper-Germanium Solder"

Moscow, Fizika i Khimiya Obrabotki Materialov [The Physics and Chemistry of Materials Processing], No 6, Nov-Dec 73, pp 104-110.

Abstract: Data are presented from a study of the interaction of copper-germanium solder containing from 5 to 10 wt. % germanium with the molybdenum-manganese metallization coating on a high-alumina ceramic, type 22KhS, during the process of soldering with various structural metal alloys. In relation to the metallization coating, the most active element in combination with copper-germanium solder is nickel, which facilitates rupture of the metallization layer, thus reducing the quality of joints produced. Recommendations are given for the selection of a protective coating for the metallization layer as a function of the structural metal used. If the ceramic is to be soldered to alloys containing nickel, the metallization surface should be protected with a galvanic layer of copper.

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UNCLASSIFIED

PROCESSING DATE—30OCT70

TITLE—EFFECT OF RADIAL AND LINEAR COMPRESSION ON SOME PROPERTIES OF HIGH BULK CRIMPED YARN -U-
AUTHOR—(05)—SMIRNOV, L.S., ZAGORODNYAYA, S.S., POZDNIKINA, L.A., TSYBENKO, L.I., NOSOVA, L.V.
COUNTRY OF INFO—USSR

SOURCE—LEGKA PROM. 1970, (1), 19-22

DATE PUBLISHED—70

SUBJECT AREAS—MATERIALS

TOPIC TAGS—CAPRONE, BREAKING STRENGTH, ELONGATION, COMPRESSIVE STRESS/(U)GOFRON CAPRONE YARN

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED

PROXY REEL/FRAE—2000/0880

STEP NO—UR/0518/70/000/001/0019/0022

CIRC ACCESSION NO—AP0124543

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124543

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INFLUENCE WAS STUDIED OF THE TITLE COMPRESSIONS, OCCURRING DURING THE YARN MANUF., UPON THE PROPERTIES OF THE HIGH BULK CRIMPED GOFRON, MADE FROM A SMOOTH KAPRON YARN (10 TEX) COMPRISING 12-39 ELEMENTAL FIBERS. THE COMPRESSION INDUCED FIBER DEFECTS AND CHANGES WERE CLASSIFIED, CHARACTERIZED, AND DISCUSSED. WITH AN INCREASE OF BOTH COMPRESSIONS THE LENGTH OF THE DEFECTIVE FIBER PART INCREASED AND ITS TOTAL MOL. ORIENTATION DECREASED. THE DEPENDENCE OF THE BREAKING STRENGTH OF A DEFECTIVE FIBER ON ITS ELONGATION WAS DETD. THE BREAKING STRENGTH INCREASED WITH INCREASING RADIAL AND LINEAR COMPRESSIONS, AND THE BREAKING ELONGATION OF GOFRON (CONTG. DEFECTIVE FIBERS), AS COMPARED WITH THAT OF THE PARENT YARN, INCREASED BY 2.6PERCENT.

UNCLASSIFIED

USSR

UDC 531.43

SEMENOV, A. P., KATSURA, A. A., and POZDNIKOV, V. V.

"The Friction of Rhenium at High Temperatures"

Moscow, Mashinostroyeniye, No 6, Nov-Dec 72, pp 80-84

Abstract: The temperature relationships of the coefficient of friction of rhenium in a vacuum (10^{-4} - 10^{-5} torr) was obtained in the case of the friction of two like specimens of rhenium against each other, and in case of the friction of a rhenium specimen against corundum ceramics (containing 0.6% MgO), on laboratory installations at temperatures of up to 1500°C. The presented experimental results testify to the high antifriction properties of rhenium at high temperatures in a vacuum and in inert gaseous media. 4 figures, 18 references.

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ANO 013070

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4R9028

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23*

AUTHOR-- POZDIN, B.

TITLE-- 50,000 OPERATIONS PER MINUTE

NEWSPAPER-- VODNYI TRANSPORT, JANUARY 24, 1970, P 1, COLS 4-7

ABSTRACT-- A COMPUTATION CENTER, SERVING FIVE STEAMSHIP LINES, HAS RECENTLY BEEN CREATED IN GOR, KIY. THE CENTER IS HEADED BY V. N. ZAKHAROV. IT IS EQUIPPED WITH THE "URALS-14-D" COMPUTER, CAPABLE OF DOING 50,000 OPERATIONS PER SECOND AND "MEMORIZING" 32,768 SIX-DIGIT NUMBERS. IN ADDITION TO THE "URALS-14-D", THE CENTER USES THE "VEGA" AND THE "ELKA" COMPUTERS.

V. M. FEDYUKHIN, CHIEF ENGINEER, A. N. DANILINA, T. M. NOVOSELOVA, YE. P. KOGAN, AND S. A. PEVZNER, ENGINEERS, AND R. N. SHULPINA, GROUP LEADER, HAVE CONTRIBUTED TO THE ESTABLISHMENT OF THE CENTER.

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172 015 UNCLASSIFIED PROCESSING DATE--11SEP70
 TITLE--TEMPERATURE DEPENDENCE OF THERMAL CONDUCTIVITY AND TEMPERATURE
 CONDUCTIVITY OF TANTALUM AND NIOBIUM -U-
 AUTHOR--POZONYAK, N.Z. *P*
 COUNTRY OF INFO--USSR
 SOURCE--(CONF-69002, PP 336-40) TEMPERATURE DEPENDENCE OF THERMAL
 CONDUCTIVITY AND TEMPERATURE CONDUCTIVITY OF TANTALUM AND NIOBIUM
 DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--THERMAL CONDUCTIVITY, TANTALUM ALLOY, NIOBIUM ALLOY, POWDER
METALLURGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0295

STEP NO--UR/0000/70/000/000/0336/0340

CIRC ACCESSION NO--AT0108593

ZZZZZZZZZZZZ

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--A0108593

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHODS OF FABRICATION, AND THE CHEMICAL COMPOSITION OF EXPERIMENTAL SPECIMENS OF POWDER METALLURGY TANTALUM AND NIOBIUM ARE REVIEWED. A SCHEME OF UNIT ARRANGEMENT FOR MEASURING TEMPERATURE CONDUCTIVITY IS GIVEN. THE QUANTITATIVE VALUES OF TEMPERATURE DEPENDENCE OF THERMAL CONDUCTIVITY AND TEMPERATURE CONDUCTIVITY OF TANTALUM AND NIOBIUM WITHIN TEMPERATURE RANGE OF 273 TO 1273DEGREESK ARE ALSO SHOWN.

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USSR

POZDNYAK, N. Z.

"Scientific and Technical Session on the Molding of Powder Materials"

Kiev, Poroshkovaya Metallurgiya, No 6, Jun 70, pp 102-103

Abstract: The Scientific and Technical Conference on Problems of Molding of Powder Materials sponsored by the Oblast Administration of the Scientific and Technical Societies of the Ferrous Metallurgy and the Machinery Manufacturing Industry and the Leningrad Polytechnic Institute im. M. I. Kalinin was held from 24 to 26 February 1970 in Leningrad. The conference was attended by 150 delegates representing Moscow, Leningrad, Kiev, Tallin, Minsk, Tashkent, Khar'kov, Gor'kiy, L'vov, Perm', Tambov and other cities. A comprehensive survey was made of the state of the arts, trends, and prospects for the advancement of processes of molding cermet materials from metals and metal-like powders, their mixtures, and compounds. The numerous presentations dealt primarily with the theory of pressing, rolling, vibratory compaction of powder materials, the theory and technology of various methods of molding, the properties and structures of compacted parts and products, the effects of various factors on molding processes and the quality of the finished products. Titles, such as: "Use

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USSR

POZDNYAK, N. Z., Poroshkovaya Metallurgiya, No 6, Jun 70, pp 102-103

of Vibratory Compaction in the Refractory Industry", "Production of Tape from Nickel Carbonyl Powders", "Density of Vibratory Packing of Particles as the Characteristic of the Formability of Powders" are representative of the reports presented at the conference. The conference devoted its second day to proceedings within the sections: "Dynamic Methods of Molding" and "Static Compaction", involving 45 presentations and reports. The resolutions adopted at the meeting were directed toward further improvements in the technology of powder molding, molding of parts intricate in shape and homogeneous in density, etc.

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USSR

UDC 621.391.16

POZDNYAK S.I., RADZIYEVSKIY, V.G., TRIFONOV, A.P. [Members, Scientific-
Technical Society Of Radio Engineering, Electronics, And Communications imeni
A.S. Popov]

"Analysis Of Optimum Reception Of Elliptically Polarized Signal"

Radiotekhnika, Vol 27, No 6, June 1972; pp 6-10

Abstract: In this paper, as applied to the problem of detection, an analysis is made of an optimum receiver of an elliptically polarized signal, and in addition the polarization parameters of the useful signal are found which assure the best quality of reception. 2 fig. 3 ref. Paper received after revision, 20 July 1971.

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USSR

ABRAMOV, S. K., POZDNYAKOV, A. A., SUPRUNOV, V. A.

UDC 539.3/.5:678

"Comparison of Standard Bending Tests for Rigid Plastics"

Tr. Rostov.-n/D. in-ta inzh. zh.-d. transp. (Works of Rostov-na-Donu Institute of Railroad Transportation Engineers), 1971, No. 79, pp 85-94 (from RZh-Mekhanika, No 12, Dec 71, Abstract No 12V1722)

Translation: It is noted that the testing of rigid plastics was standardized in all countries in connection with its simplicity and information yield. Differences in technique consists basically in the dimensions of the sample, the size of the arc and the rate of loading. According to GOST 4648-63 the span is equal to 10 thicknesses of the sample, according to standards of the Federal Republic of Germany, Japan, and ASTM D790-63, the span is equal to 16 thicknesses and the rate of deformation is 0.01 min⁻¹, or approximately 10 times less than recommended by GOST. Analysis of available data leads to the conclusion that test results according to GOST raise the strength limits under bending by a factor of 1.1-1.3 as compared with other methods. It is shown that the slight divergence is associated with the nonlinearity of the dependence of stress on deformation up to the point of breakdown; with linearity of this dependence the discrepancy can theoretically reach a factor of ~2.6.

V. N. Geminov.
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USSR

UDC 547.753.757.07+546.79

DMITREVSKAYA, L. I., SMUSHKEVICH, Yu. I., POZDNYAKOV, A. D., and SUVOROV, N.N.,
Moscow Chemico-Technological Institute imeni D. I. Mendeleev, Moscow

"Derivatives of Indole. LXXXII. Synthesis of Derivatives of Indole-¹⁵N"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 4, Apr 73, pp 516-517

Abstract: 3-Indolylacetic-¹⁵N acid (I), tryptamine-1-¹⁵N (II), and N, N-dimethyltryptamine-1-¹⁵N (III) were synthesized. Indole-¹⁵N was prepared by the cyclization of phenylhydrazone-1-¹⁵N on gamma-Al₂O₃ (cf. I. D. Pletnev et al, Khim. Geterotsik. Soyed., 1632, 1972) and I by reacting indole-¹⁵N with chloroacetic acid at 245-500° in an autoclave in the presence of KOH. The reaction of indole-¹⁵N with oxalic acid dichloride yielded 3-indolylloxalylchloride-¹⁵N, which was converted to 3-indolylloxalylamide-1-¹⁵N (IV) and the corresponding dimethylamide (V) by reacting it with NH₃ and Me₂NH, respectively. Reduction of IV and V with LiAlH₄ in tetrahydrofuran led to the formation of II and III, respectively. The content of ¹⁵N was 10.9% in indole-¹⁵N, 10.7% in I, 5.33% in II, and 5.46% in III.

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1/2 032

UNCLASSIFIED

PROCESSING DATE--11SEP70

TITLE--MEASUREMENT OF THE LAYER OF HALF DOSE WEAKENING IN SHORT DISTANCE X-
RAY THERAPY -U-

AUTHOR--AKATKIN, O.A., POZDNYAKOV, G.YE.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 3, PP 57-59

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--X RAY RADIATION BIOLOGIC EFFECT, IONIZATION CHAMBER, RADIATION
MEASUREMENT, SKIN DISEASE, NEOPLASM, PARAFFIN WAX

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1985/1677

STEP NO--UR/0241/70/015/003/0057/0059

CIRC ACCESSION NO--AP0101732

UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0101732

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS GIVE THE MEASUREMENTS OF THE LAYER OF THE "HALF DOSE" FOR ROENTGEN RADIATION (EFF 15-25 KSV) FOR THE PURPOSE OF SELECTION OF UNIVERSAL REGIMES OF IRRADIATION OF NEOPLASTIC DISEASES OF THE SKIN. THE TISSUE EQUIVALENCE OF PARAFFIN AND WAX WAS EVALUATED. THE AUTHORS DISCUSS THE ERRORS IN MEASUREMENT OF THE DOSE AND "LAYER OF HALF DOSE WEAKENING" ASSOCIATED WITH THE ENERGY DEPENDENCE OF IONIZATION CHAMBERS IN PHANTOM MEASUREMENT.

UNCLASSIFIED

USSR

UDC: 621.391.822.4:621.317.743

POZDNYAKOV, L. G.

"Digital Computer Calculation of the Coefficient of Mutual Induction"

Nauch. tr. Omsk. in-t inzh. zh.-d. transp. (Scientific Works. Omsk Institute of Railway Transportation Engineers), 1970, 119, pp 63-73 (from RZh-Radio-tehnika, No 6, Jun 71, Abstract No 6A228)

Translation: An algorithm and program are set up for the "Nairi" digital computer to calculate all components and the absolute value of the coefficient of mutual induction between a conductor of finite length and a dipole. A nomogram is plotted from the results of the calculation which permits solving problems in interpreting the results of measurements of the conductivity of the earth, as well as calculations of the hazard effect when the finite length of the influencing line must be taken into account. Three illustrations, two tables, bibliography of six titles. Resumé.

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- 30 -

Mechanical Properties

USSR

UDC 621.785:621.9-462

~~POZDNYAKOV, I. G., GANZULYA, A. P., DEMENT'YEVA, ZH. A., ATAMANENKO, V. A.,~~
~~PAVLOVTSEVA, N. M., and BUTENKO, V. F.~~

"Investigation of the Effect of Single- and Double-Sided Cooling in Temper Hardening of Pipes on Their Mechanical Properties"

Dnepropetrovsk, Metallurgicheskaya i Gornorudnaya Promyshlennost', No 5, Sep-Oct 70, pp 38-40

Abstract: A study was made to determine the effect on mechanical properties of single- and double-sided cooling in temper hardening of low-carbon steel pipes intended for use in pipe lines in the Extreme North. Tempering of low-carbon 14KhGS steel sheets 11 mm thick was done at 900°C in a water tank (double-sided cooling) and under spraying (single-sided cooling), simulating cooling conditions in service, followed by annealing at 600°C for 1 hour. Tests were also conducted on pipes 1020 mm in diameter with an 11 mm wall thickness. The experiment procedure and equipment are described and the variation of mechanical and physical properties across the sheet thickness is shown. The structure obtained after tempering with single- and double-sided cooling

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USSR

POZDNYAKOV, L. G., et al, Metallurgicheskaya i Gornorudnaya Promyshlennost',
No 5, Sep-Oct 70, pp 38-40

was found to be the same. The authors recommend single-sided cooling, which
appears to be more suitable for tempering large-diameter pipes, with wall
thickness up to 12 mm made of low-carbon 14KhGS and 17GS steels.

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USSR

UDC 577.4

MIKONI, S. V., POZDNYAKOV, L. N.

"Algorithm for Constructing Tests for Combination Automata"

V sb. Tekhn. diagnostika (Technical Diagnostics -- collection of works), Moscow, Nauka Press, 1972, pp 178-181 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V425)

Translation: The algorithm is designed to construct inspection tests for combination automata, the logical elements of which implement monotonic boolean functions (\vee , \wedge) and the inverses of them (\downarrow , \uparrow).

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Vacuum Tubes

UDC: 621.385.632

USSR

AVERBUKH, M. E., MILYUTIN, D. D., POZDNYAKOV, L. V.

"A Traveling Wave Tube"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 15, 1970, Author's Certificate No 269325, filed 28 Jul 67, p 62

Abstract: This author's certificate introduces: 1. A traveling wave tube with helical decelerating system and a magnetic periodic focusing system which consists of annular magnets mounted in series with annular pole pieces located between them. As a distinguishing feature of the patent, the tube is designed to assure stable non-mutual absorption of energy in the SHF range, and provision is made for changing the absorption frequency range. Inside the cylindrical volume of the traveling wave tube restricted by the magnetic periodic focusing system are alternating ferrite and nonmagnetic isolating elements (for instance in the form of rings or rods), the ferrite elements being located in the regions between the pole pieces of the magnetic periodic focusing system where the longitudinal magnetic field has the same direction. 2. A modification of this traveling wave tube distinguished by reduced non-mutual absorption of energy in the SHF range in a narrow frequency band. The ferromagnetic elements are periodically arranged with spacing which is equal to or a whole number multiple of 1/2

USSR

AVERBUKH, M. E., et al, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 15, 1970

the period of the magnetic periodic focusing system in regions of the magnetic field of identical magnitude. 3. A modification of this tube in which the distinguishing feature is extension of the band of frequencies absorbed. The ferrite elements are shifted with respect to the middle of the region between pole pieces by distances which differ for each element but do not exceed a quarter of the period of the magnetic periodic focusing system.

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USSR

UDC 621.385.632 (088.8)

AVERBUKH, M.E., MILYUTIN, D.D., ROZDNYAKOV, L.V.

"Traveling-Wave Tube"

USSR Author's Certificate No 269325, filed 28 July 67, published 28 July 70 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A192P)

Translation: The proposed TWT with a spiral delay system and a magnetic periodic focusing system (MPFS) consists of successively mounted annular magnets between which are located annular pole pieces. With the object of assuring stable non-reciprocal absorption of energy of the microwave band and the possibility of changing the frequency range of the absorption, within the cylindrical volume of the TWT limited by the MPFS, alternating ferrite and nonmagnetic insulating units (e.g., in the form of rings or bars) are positioned, while ferrite units are located in the regions between the pole pieces of the MPFS where a longitudinal magnetic field has an identical direction. The proposed improvement of a TWT lies in the fact that, with the object of obtaining an increased nonreciprocal absorption of energy of the microwave band in a narrow frequency band, the ferrite units are located periodically with a period equal to or exceeding by a whole number of times the period of

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USSR

AVERBUKH, M. E., et al, USSR Author's Certificate No 269325,
filed 23 July 1967, published 28 July 1970

the MPFS in the regions of the longitudinal magnetic field of identical magnitude. In another variation of a TWT, with the object of expanding the band of the frequencies being absorbed, the ferrite units are displaced with reference to the central regions between the pole pieces, different for each unit but not exceeding four periods of the MPFS spacing.

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USSR

UDC 612.826.4.018

POZDNYAKOV, O. M., and POLGAR, A. A., Electron Microscopy Group, Laboratory of the Pathological Physiology of Infectious Intoxications, Institute of Normal and Pathological Physiology, Academy of Medical Sciences, USSR

"Ultrastructural Variations of the Neurosecretory Apparatus of the Neuromuscular Synapse During Its Function"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 3, 1972, pp 112-116

Abstract: A study was made of the neuromuscular synapses of the diaphragm muscles of albino rats weighing 100 to 120 grams. The muscle was frozen at rest and with short-term (1 and 10 seconds) rhythmic (50 hertz) stimulation. It was fixed in formaldehyde and osmium tetrachloride. The method retained the basic structural features of the neuromuscular synapse. This made it possible to detect certain features of the localization of the synaptic vesicles: uniform distribution along the axon terminal in the state of rest and reduced number and redistribution of the vesicles in the presence of stimulation. Vesicles were also encountered in the synaptic cleft.

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Physiology

USSR

UDC 612.816.018.014.46:576.851.097.29

KRYZHANOVSKIY, G. N., POZDNYAKOV, O. M., D'YAKONOVA, M. V., POLGAR, A. A.,
and SMIRNOVA, V. S., Laboratory of the Pathological Physiology of infectious
Intoxications and Electron Microscopy Group, Institute of Normal and Patho-
logical Physiology, Academy of Medical Sciences USSR

"Impairment of Neurosecretion in the Myoneural Junctions of Muscle Poisoned
With Tetanus Toxin"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 12, 1971, pp
27-31

Abstract: Electrophysiological and electron-microscopic study was conducted
of the neuromuscular synapses in the rat diaphragm locally poisoned with
tetanus toxin ($2 \cdot 10^5$ MLD). Injection of the toxin resulted in a progressive
decrease in the amplitude of the respiratory burst in the poisoned diaphragm,
but it had no effect on the actual nature of the respiratory electrical ac-
tivity. The animals died in 7 to 9 hours with symptoms of paralysis of the
respiratory muscles. A comparison of the histograms for intact neuromuscular
preparations isolated from the diaphragm with those for preparations isolated
3 to 3-1/2 hours after injection of the toxin revealed a sharp decrease in the
level of spontaneous synaptic activity in the poisoned muscles, an indication
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USSR

KRYZHANOVSKIY, G. N., et al., Byulleten' Eksperimental'noy Biologii i Meditsiny, No 12, 1971, pp 27-31

of impairment of the neurosecretory apparatus. Injection of inactivated toxin did not impair neurosecretion. Electron-microscopic examination showed that the neuromuscular synapse in the poisoned muscle retained its structure. Changes were noted only in the axon terminal in the form of swelling of the mitochondria and increased number of synaptic vesicles. There were no changes in the subsynaptic structures.

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- 54 -

USSR

UDC 616.74-018.83-02:576.851.551.097.29

POZDNYAKOV, O. M., POLGAR, A. A., SMIRNOVA, V. S. and KRYZHANOVSKIY, G. N.,
Electron Microscopy Group, Laboratory of Pathophysiology of Infectious Intoxi-
cations, Institute of Normal and Pathological Physiology of the Academy of
Medical Sciences USSR, Moscow

"Change in the Ultrastructure of the Neuromuscular Junction Under the Action
of Tetanus Toxin"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 74, No 7, .
1972, pp 113-116

Abstract: Changes in the ultrastructure of the neuromuscular junction of the
rat diaphragm were studied 3-5 hours after intramuscular injection of $2 \cdot 10^5$ DLM
of tetanus toxin. The general relationship of structures remained intact, and
changes were noted mainly in the axon terminal, the most marked of which was
an increase in the number of presynaptic vesicles, most of which appeared
normal. The number of matrix density of mitochondria in axon terminals was
increased. Some injury and degeneration of the presynaptic terminals was noted.
It is suggested that the observed changes are consistent with damage to the axon
membrane leading to a decreased release of neurotransmitter with accumulation
in the axon terminal.

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USSR

UDC: 621.396.69:621.372.412(088.8)

POZDNYAKOV, P. G., VASIN, I. G., BANKOV, V. N.

"A Quartz Torsional Resonator"

USSR Author's Certificate No 253162, Filed 17 Apr 68, Published 24 Feb 70 (from
RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10V389 P)

Translation: This Author's Certificate introduces a quartz torsional resonator with a piezoelectric element made in the form of a rod of rectangular cross section with open slots. As a distinguishing feature of the patent, the resonator is designed so that the resonance frequency is lowered and the overall dimensions are reduced without impairing the temperature coefficient of frequency. The slots located on one half of the rod are arranged perpendicularly to the slots located on the other half, the number of slots on one half being equal to that on the other.

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USSR

P UDC 621.373.421.13:621.372.412

ANDROSOVA, V. G., BIRYUKOV, V. I., POZDNYAKOV, P. G.

"Quartz Resonators with AT-Cut Piezoelements of Rectangular Shape"

Elektron. tekhnika. Nauchno-tekhn. sb. (Electronic Engineering. Scientific and Technical Collection), 1970, ser 9, vyp. 2, pp 33-39 (from RZh-Radio-tekhnika, No 9, Sep 70, Abstract No 9D278)

Translation: This article contains the results of investigations of the shape of the oscillations of rectangular AT-cut piezoelements and also the distribution of bias with respect to their surface. The arrangement of the minimum bias points attachment at which introduces insignificant damping are determined. The possibilities of selecting the relations of the dimensions of the piezoelements and their effect on the spectral and temperature characteristics are discussed. Results of measuring the resonator parameters with wire attachment confirming the possibilities of a significant improvement in the resonator parameters on frequencies below 1,000 kilohertz are presented. There are eight illustrations and a five-entry bibliography.

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USSR

UDC 617.713-002-02:616.523/-085

MAYCHUK, YU. F., Doctor of Medical Sciences, POZDNYAKOV, V. I., Candidate of Medical Sciences and ABRAMISHVILI, R. I., Scientific Associate Virus Clinical Division, Moscow Institute of Eye Diseases imeni Helmholtz, Moscow

"Leukocyte Interferon and Its Combination With Methacil in the Therapy of Herpetic Keratites"

Odessa, Oftal'mologicheskiy Zhurnal, No 3, 1971, pp 193-195

Abstract: It had been established that human leukocytic interferon inhibits the propagation of herpes simplex virus in tissue cultures and that it is effective in the therapy of experimental herpetic keratitis of rabbits. Clinical observations were carried out on 56 patients with herpetic keratitis who were treated by the application of leukocytic interferon in the form of eye drops. Interferon with an activity of 150-200 units/ml was found to have a therapeutic effect. In cases of superficial herpetic keratitis, epithelization of the cornea on its application usually set in within 4-15 days. In cases of deeper involvement of the cornea and participation of the uveal tract, epithelization set in later and additional treatment was required. Interferon with activity less than 100 units/ml had a weaker effect, while that with an activity of 500-700 units/ml had approximately the same effect
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USSR

MAYCHUK, YU. F., et al., Oftal'mologicheskiy Zhurnal, No 3, 1971, pp 193-195

as the preparation with 150-200 units/ml. Units of activity were determined on the basis of effect on a tissue culture infected with herpes virus. Interferon in combination with methacil had a greater therapeutic effect than interferon alone; use of the interferon-methacil mixture made it possible to reduce the number of applications from 5-6 to 3 per day. In a decision of 24 Apr 70, the Pharmacological Committee of the Ministry of Health USSR approved the use of leukocytic interferon for the treatment of virus diseases of the eyes.

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USSR

UDC: None

POZDNYAKOV, V. M. and KISHKIN, A. V.

"Aerophoto Device for Recording the Relative Bearing of the Sun"

Moscow, Otkrytiya. izobreteniya, promyshlennyye obraztsy. tovarnyye znaki, No 12, 1973, p 117, No 371431.

Abstract: The distinguishing feature of this device is the construction of the hood, which is made in the form of plane-parallel glass plates. These are half-silvered and are placed in front of the objective at an angle to the objective's field of view. This arrangement simplifies the instrument's structure. A diagram of the system and the optical geometry it produces is shown.

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- 115 -

USSR

POZDNYAKOV, V. M., VOL'F, L. A., YEFREMOVA, T. B., and MEOS, A. I., Leningrad
Institute of Textile and Light Industry imeni S. M. Kirov

"Preparation of Fibers for Medical Use From Copolymers of Vinyl Alcohol and
Vinylpyrrolidone"

Riga, Fiziologicheskii i Opticheskii Aktivnyye Polimernyye Veshchestva, "Zinatne,"
1971, pp 155-158

Abstract: The aim of this work was to prepare fibers capable of absorbing anti-bacterial preparations and prolonging their release in the human body. It was hypothesized that the presence of the polyvinylpyrrolidone chains in such fibers would improve the desirable properties of the prepared materials. Polyvinyl alcohol (PVA) and polyvinylpyrrolidone (PVP) were used for this purpose. Several methods for the preparation of materials with antimicrobial properties were tried. One of them was molding a mechanical mixture of 15 and 20% solutions of PVA and PVP in ratios of 90:10 and 70:30, respectively. The molding was carried out in the sodium sulfate bath (400 g Na₂SO₄/liter), followed by stretching the prepared fibers in air. When water-soluble fibers were desirable, they were washed free of Na₂SO₄ in acetone. The initial ratio of PVA and PVP remained unchanged in the prepared product. The second method used
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USSR

POZDNYAKOV, V. M., et al., Fiziologicheskii i Opticheski Aktivnyye Polimernyye Veshchestva, "Zinatne," 1971, pp 155-158

was the copolymerization of PVA and PVP. The copolymerization was carried out successfully in ethanol, benzene, or ethyl acetate (10-50% with respect to weight of monomers). The obtained product always contained the vinylpyrrolidone chains regardless of the initial ratio of starting compounds. However, copolymerization in benzene produced the best results. Copolymerization by the emulsion method was also tried. Fibers from spinning solution (25-30%) were also prepared by molding, followed by stretching in air, drying, and washing in alcohol. This method yielded fibers with good physical and mechanical properties. They were soluble in water at room temp. in 1 hr, but the solubility time could be prolonged by thermostabilization of fibers in air. All fibers produced by the above methods are undergoing testing at medical institutions.

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- 90 -

USSR

POZDNYAKOV, V. S., IVANOV, N. G., KAZBEKOV, I. M.

"Toxicology of Acetylpropyl Alcohol"

Sb. "Toksikol. novykh prom. khim. veshchestv" (Toxicology of New Industrial Chemicals—Collection of Works), 1973, vyp. 13, Moscow, "Meditsina," pp 124-131 (from Referativnyy Zhurnal, 30F, Biologicheskaya Khimiya, No 18, 25 September 1973, Abstract No 18F1757)

Translation: The proposed maximum permissible concentration of acetylpropyl alcohol in air of a work area is 10 mg/liter. The LD-50 is 6400 mg/kg and the cumulative capacity is insignificant.

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USSR

UDC: 669.245'27'292.018.67(088.8)

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NAM, B. P., D'YAKOV, I. G., IVANOV, V. I., POZDNYAKOV, V. V., REZONTOV, B. I., GORBUL'SKIY, L. F.

"Alloy for the Centers of the Oxide Cathodes of Electric-Vacuum Devices"

USSR Author's Certificate Number 358397, Filed 23/07/70, Published 18/01/73
(Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1975, Abstract No 81711P, by O. Pimenova).

Translation: An alloy is suggested for the cores of the oxide cathodes of electric vacuum devices, differing from known alloys in that in order to improve the sublimation characteristics of the core, increase the stability of the electrical parameters and the durability of electric-vacuum devices, V is introduced in the following ratio of components (%); W 2.0-4.0, V 0.05-0.8, Ni -- remainder. The mechanical properties in the annealed state are: σ_b 42, 20 and 11 kg/mm², δ 45, 43 and 36% at 20, 600 and 800° respectively; in the cold worked state σ_b 79 kg/mm², δ 2% at 20°, ρ at 20, 600 and 800° 0.174, 0.462 and 0.518 ohm·mm²/m respectively, T_{recr} 600°. The rate of evaporation of the activator (in mg·cm²/hr) in a vacuum of $1 \cdot 10^{-7}$ mm hg is $1.5 \cdot 10^{-8}$ at

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USSR

Nam, B. P., D'yakov, I. G., Ivanov, V. I., Pozdnyakov, V. V., Rezontov, B. I.,
Gorbul'skiy, L. F., USSR Author's Certificate Number 358397, Filed 23/07/70,
Published 18.01/73.

750°, $1.7 \cdot 10^{-7}$ at 840°, $2.7 \cdot 10^{-6}$ at 930° and $8.3 \cdot 10^{-6}$ at 1000°.

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USSR

UDC 669.245'27'296:669.018.2:669.018.6

NAM, B. P., D'YAKOV, I. G., POZDNYAKOV, V. V., REZONTOV, B. I., and IVANOV, V. I.

"Preparation of Vacuum-Melted Ni-W-Zr Alloys for Oxide Cathode Bases and Their Investigation in Experimental Instruments"

Elektron. tekhnika. Nauchno-tekhn. sb. Materialy (Electronic Engineering. Collection of Scientific and Technical Works on Materials), 1970, vyp. 2, pp 9-15 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No 12 I857 by the authors)

Translation: The authors describe the preparation of Ni-W-Zr alloys with impurity content $\leq 0.05\%$ intended for use as oxide cathode bases of electric vacuum devices. Some physical and mechanical properties of the alloys under study are presented, as well as test results of the alloys in experimental diodes. From the standpoint of assuring stable protracted operation of an oxide cathode, the alloy Ni + 4%W + (0.06-0.1)%Zr possesses the best properties. This alloy has a high recrystallization temperature and high strength at operating temperatures.

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1/2 029 UNCLASSIFIED PROCESSING DATE--02UCT70
TITLE--STUDY OF SOME PROPERTIES OF HIGH MOLECULAR FIBRINOGEN TRYPTIC
HYDROLYSIS PRODUCTS -U- \$
AUTHOR--(05)-BELITSER, V.O., VARETSKA, T.V., TSINKALOVSKA, S.M.,
PGZDNYAKOVA, T.M., ORLOVSKA, N.M. P
COUNTRY OF INFO--USSR
SOURCE--UKRAYNS'KIY BIOKHMICHNIY ZHURNAL, 1970, VOL 42, NR 2, PP 165-174
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--FIBRINOGEN, HYDROLYSIS, POLYMERIZATION, TRYPSIN, AMINO ACID,
ELECTROPHORESIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/1677 STEP NO--UR/0300/70/042/002/0165/0174
CIRC ACCESSION NO--AP0106423
UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0106423

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS KNOWN THAT HIGH MOLECULAR WEIGHT PRODUCTS FORMED DURING PROTEOLYTIC DEGRADATION OF FIBRINOGEN, INHIBIT THE FIBRIN MONOMER POLYMERIZATION. THE EXISTENCE OF COMPLEMENTARY STRUCTURES CHARACTERISTIC FOR THE SPECIFIC POLYMERIZATION CENTERS IN THESE FRAGMENTS MAY BE POSTULATED. HIGH MOLECULAR WEIGHT PRODUCTS, APPEARING DURING DEGRADATION OF FIBRINOGEN MOLECULE BY LOW CONCENTRATIONS OF TRYPSIN (ENZYME SUBSTRATE RATIO 1:2500 BY WEIGHT) WERE STUDIED. THEY WERE SEPARATED FROM TRYPTIC HYDROLYZATE OF FIBRINOGEN BY GEL FILTRATION ON SEPHADEX G 150. IT WAS SHOWN THAT DURING HYDROLYSIS LASTING FOR 120 HOURS AND MORE THESE PRODUCTS WERE GREATLY CHANGED IN THEIR ANTIPOLYMERIZING ACTIVITY, BEHAVIOUR IN GEL FILTRATION AND POLYACRYLAMIDE GEL ELECTROPHORESIS AND N TERMINAL AMINO ACIDS AS WELL. THE MOST ACTIVE AND AT THE SAME TIME THE LEAST HETEROGENEOUS PRODUCTS WERE PRODUCED DURING THE PROLONG HYDROLYSIS OF FIBRINOGEN BY TRYPSIN.

UNCLASSIFIED

USSR

POLTAVTSEV, Yu. G., POZDNYAKOVA, V. M.

"Change in the Structure of Vitreous Arsenic Trisulphide and Triselenide Under the Effect of Penetrating Radiation"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, July 1973, pp 1150-1152

Abstract: An X-ray study was made of vitreous As_2S_3 and As_2Se_3 subjected to the gamma radiation of Co^{60} (10^8 roentgens). Under irradiation the structure of vitreous As_2S_3 is shown to approach that of a crystal. The first coordination number of irradiated As_2Se_3 is larger than that of the original vitreous samples.

The article includes five figures and a table. There is one bibliographic reference.

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1/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--MICROCRYSTALLOSCOPIC REACTIONS FOR ETHOXYD AND KANAMYCIN -U-
AUTHOR--(02)-KHMELEVSKAYA, S.S., POZDNYAKOVA, V.T. P
COUNTRY OF INFO--USSR
SOURCE--FARM. ZH. (KIEV) 1970, 25(1), 51-3
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ORGANIC OXIDE, ANTIBIOTIC, CHEMICAL REACTION, CRYSTALLIZATION,
MICROSCOPY, KANAMYCIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1166 STEP NO--UR/0491/70/025/001/0051/0053
CIRC ACCESSION NO--AP0130194

UNCLASSIFIED

2/2 020
CIRC ACCESSION NO--AP0130194

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ETHOXYD (I) GAVE CHARACTERISTIC REACTIONS WITH THE FOLLOWING REAGENTS (REAGENT, SOLVENT FOR I, NO. OF AXES IN THE CRYSTALS FORMED, EXTINCTION ANGLE, ELONGATION SIGN, N SUBGAMMA, N SUBALPHA, BIREFRINGENCE, MIN. DETECTABLE AMT. IN MU G, LIMITING CONC. GIVEN): 1PERCENT AGNO SUB3, HCONME SUB2, 1, 90DEGREES, NEG., 1.690, 1.653, 0.037, 4.53, 1:4400; I SOLN. IN CONCD. HCL, HCONME SUB2, 1, 90DEGREES, NEG., 1.600, 1.567, 0.033, 0.16, 1:125,000; A SOLN. OBTAINED BY DISSOLVING 2 G NH SUB4 SCN AND 1 G ZNSO SUB4 IN 50 ML H SUB2 O, ME SUB2 CO,H SUB2 O (3:1), 1, 90DEGREES, NEG., NEGATIVE, NEGATIVE, NEGATIVE, 0.48, 1:41,700. A 0.2PERCENT SOLN. OF KANAMYCIN WITH A FRESHLY PREPD. REINECKE SALT GAVE ANISOTROPIC, MONOAXIAL CRYSTALS WITH EXTINCTION ANGLE 90DEGREES, NEG. ELONGATION SIGN, N SUBGAMMA 1.686, N SUBALPHA 1.639, AND BIREFRINGENCE 0.047. THE MIN. DETECTABLE AMT. WAS 0.2 MU G AND THE LIMITING CONC. 1:100,000. FACILITY: LVOV MED. INST., LVOV, USSR.

UNCLASSIFIED

USSR

632.95

SHITS, L. A., TEREKHOVA, A. I., and ~~POZDNYSHEV, G. B.~~

"Method of Producing Oil Concentrates of Invert Emulsions for Agricultural Purposes"

USSR Authors' Certificate No 318381, Cl. A 01 n17/10, filed 27 Apr 70, published 17 Dec 71 (from RZh-Khimiya, No 14, 25 Jul 72, Abstract No 14N552P by T. A. Belyayeva)

Translation: To increase the emulsifiability of the concentrate and widen the area of optimum component ratios in the oil phase, as well as reduce the cost of the concentrate, use of a natural stabilizer for commercial oil emulsions is suggested. The stabilizer is the by-product of the crude-oil dehydration (deemulsification) process. Natural oil emulsifiers can be isolated from the slurry ("intermediate layer") that forms in petroleum collecting tanks or settling tanks after petroleum has been treated with demulsifier reagents. The "intermediate layer," rid of petroleum residues, is boiled; the precipitate is separated out; the layer is rinsed on a filter, first with boiling, then with cold water, is dried and used as an emulsifier of invert pesticidal emulsion. From the "intermediate layer" that originates as a result of treating crude oil from the Mukhanovo field with the deemulsifier

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USSR

SHITS, L. A., et al., USSR Authors' Certificate No 318331, Cl. A 01 n 17/10, filed 27 Apr 70, published 17 Dec 71

Dissolve all the product that settles in the precipitate is isolated; 100 grams of it are kept in contact for 30 minutes with 0.5-1 liter of boiling water, filtered, rinsed with 1-2 liters of cold water, and air-dried. A concentrate of the following composition is obtained (part by weight): butyl ester of 2,4-D (79-95%) 30-40, spindle oil 60-70, petroleum solvent 10-20, emulsifier 3-7. Water is poured into the concentrate, the concentrate is stirred, and invert emulsion is obtained.

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USSR

UDC 534.131:629.76

POZHALOSTIN, A. A.

"Experimental Determination of the Frequency and Forms of Axisymmetrical Oscillations of an Elastic Tank With Liquid"

Kazan', Izvestiya Vysshykh Uchebnykh Zavedeniy, Aviatsionnaya Tekhnika, No 3, 1970, pp 148-151

Abstract: In the article are presented the results and procedure of an experiment dealing with determination of the lowest symmetrical forms and frequencies of the oscillation of an elastic cylindrical tank with liquid. The influence of the pressurization pressure and the unwetted part of the walls of the cylindrical tank upon the oscillation frequencies is analyzed. A comparison is made between the experimental absolute values of the frequency with the frequency values obtained by the calculations. Good coincidence of the indicated value is observed. 6 figures, 5 bibliographic entries.

1/1

USSR

UDC 581.14:632.4:582.285:633.63

POZHAR, Z. A., and ASSAUL, B. D., All-Union Scientific Research Institute of Sugar Beets, Kiev

"Biology of the Pathogen of Sugar Beet Rust *Uromyces betae* (Pers.) Lev"

Leningrad, Mikologiya i Fitopatologiya, No 5, No 2, 1971, pp 166-171

Abstract: The pathogen passes through five stages in its development: basidial, spermatogonial, aecidial, uredal and teleutal. The importance of each stage in the development of the disease was studied. It was found that immediately after formation of the teleutospores, their number increases only insignificantly (up to 1-2%). The teleutospores are the principal form in which the fungus over winters. Teleutospores on the soil surface represent the greatest threat to spring plants. The emergence of rust in the spermatogonial and aecidial stages is usually observed in the first half of May or, depending on the weather conditions, at the end of April or in the latter part of May. These forms of the fungus affect plant leaflets. As the aecidiospores are taken up by water, which then is absorbed by the plant, they infect the plant. The optimum temperature for their growth and plant infection was found to be 14-15°C, but they develop and represent a danger at temperatures ranging from +4° to 24°C. The incubation period after infection of the beet leaflets, at 1/2

USSR

POZHAR, Z. A., and ASSUAL, B. D., Mikologiya i Fitopatologiya, No 5, No 2, 1971, pp 166-171

a temperature of 16-23°C, is 14 to 28 days. As a result of the infection of plants by aecidiospores, the uredostage of the pathogen appears and reddish-brown uredospores are observed on the stems of seed plants. The incubation period after infection by uredospores varies from 8 to 32 days. The optimum temperature at which the shortest incubation period is observed is 17-19°C. As the temperature rises, the incubation period is prolonged. The development of rust progresses, usually at the moderate temperature of early summer and fall. When the mean daily temperature is 22°C and above, the development of rust is inhibited. This principle has also been observed with other fungus infections. Measures for controlling sugar beet rust and for elimination of existing foci are proposed.

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USSR

UDC 615.285.7.039.036.11.085.835.3

SAVATAYEV, N. V., BRESTKINA, L. M., TONKOPIY, V. D., POZHARISSKAYA, T. D., and FROLOV, S. F.

"Compressed Oxygen in the Treatment of Acute Chlorophos Poisoning"

Moscow, Farmakologiya i Toksikologiya, No 6, 1972, pp 738-741

Abstract: Injection of rats with the pesticide chlorophos (1000 mg/kg) produced the characteristic symptoms of organophosphorus poisoning in 10 minutes. Administration of oxygen under normal barometric pressure at this time had no effect on the symptoms, but it slightly increased the animals' survival time. On the other hand, oxygen under a pressure of 3 atm not only mitigated the course of the intoxication, but increased the survival time substantially. Atropine alone or administered in combination with oxygen 10 min after injection of chlorophos had no effect on the outcome of the poisoning, although it greatly relieved the symptoms. Compressed oxygen and atropine used separately 60 min after poisoning had no effect on the course or outcome, but when the two were used at the same time, they produced a marked therapeutic effect and a higher survival rate. Treatment of the animals with atropine and TMB-4 resulted in a 90 to 100% survival rate. And when the two agents were combined with oxygen, the animals were outwardly indistinguishable from controls after only 1 hour in the pressure chamber.

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1/2 016 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--TOXICOLOGICAL TRIALS OF A NEW INSECT REPELLENT HEXAMETHYLENE
BUTANSULFAMINDE -U-
AUTHOR--(04)-KAZHDAN, V.B., KULESHOV, V.I., POZHARISSKAYA, T.D., SAVINSKIY,
YA.R.
COUNTRY OF INFO--USSR
SOURCE--MEDITSINSKAYA PARAZITOLOGIYA I PARAZITARNYYE BOLENZI, 1970, VOL
39, NR 2, PP 220-224
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--INSECT REPELLENT, TOXICOLOGY, METHYLENE, BUTANE, AMIDE, WHITE
MOUSE, ORGANIC SULFUR COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FKAME--1990/1434

STEP NO--UR/0358/70/039/002/0220/0224

CIRC ACCESSION NO--AP0109494

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0109494

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AS A RESULT OF TOXICOLOGICAL INVESTIGATION OF A NEW INSECT REPELLENT, HEXAMETHYLENEBUTANSULFAMIDE (HMBS), THE AUTHORS ESTABLISHED THAT THIS DRUG HAD LOW TOXICITY FOR WARM BLOODED ANIMALS. ITS LD SUB50 FOR WHITE MICE WAS 7560 MG-KG IN EPICUTANEOUS APPLICATION, 519 MG-KG, BY THE INTRAPERITONEAL ROUTE AND 5400-6480 MG-KG, BY INTRODUCTION INTO THE STOMACH. MULTIPLE (25 TIMES) DAILY APPLICATION OF HMBS TO THE SKIN OF RABBITS IN A DOSE OF 1 G-KG (DENSITY OF 1 ML-100 CM PRIME2) PRODUCED IN THE ANIMALS NO PATHOLOGICAL MANIFESTATIONS OF GENERAL CHARACTER. TOPICALLY UNDER THESE CONDITIONS, FOCAL INFLAMMATORY SIGNS DEVELOPED IN SUPERFICIAL LAYERS OF THE SKIN. IN SIMILAR APPLICATIONS OF THE DRUG IN A DOSE OF 0.4 ML-100 CM PRIME2 THE RABBITS DEVELOPED ONLY MILD HYPEREMIA OF THE SKIN AFTER 2-4 APPLICATIONS, BUT IT DISAPPEARED IN A FEW DAYS DESPITE FURTHER APPLICATION OF THE REPELLENT. DAILY 25 TIME APPLICATION OF HMBS TO THE HUMAN SKIN IN A DOSE OF 0.4 ML-100 CM PRIME2 WHICH EXCEEDED 2 FOLD THE DOSE RECOMMENDED FOR PRACTICAL PURPOSES PRODUCED NO LOCAL CHANGES.

FACILITY: VOYENNO-MEDITSINSKAYA AKADEMIYA IM. S. M. KIROVA, LENINGRAD.

UNCLASSIFIED

USSR

UDC 615.285.7:547.551.525.211.17.099

KAZHDAN, V. B., KULESHOV, V. I., POZHARISSKAYA, T. D., and SAVINSKIY, YA. R., Military-Medical Academy named S. M. Kirov

"Toxicological Studies of the New Insect Repellent Hexamethylenebutanesulfamide"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 2, 1970, pp 220-224

Abstract: The recently developed repellent hexamethylenebutanesulfamide (HMBS) - $C_{12}H_{24}SO_2N(CH_2)_6$ - was as active as diethyltoluamide and equally effective against fleas, ixodid ticks, mosquitos, gnats, midges, and horseflies. Tests on mice, rabbits, and human beings showed that it has low toxicity. The LD₅₀ for white mice was 7560 mg/kg when applied to the skin, 5400-6480 mg/kg when injected into the stomach, and 519 mg/kg when injected intraperitoneally. Twenty-five daily cutaneous applications of HMBS in a dose of 1 g/kg 1 ml per 100 cm² produced in rabbits local inflammation in the surface layers, but no systemic pathological reactions. Daily topical applications of smaller doses (0.2-0.4/100 cm²) caused only mild hyperemia and edema of the skin after 2-4 applications, but after 9 or 10 days the symptoms began to disappear and a crust formed.

USSR

KAZHDAN, V. B., et al., Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 2, 1970, pp 220-224

which was eventually sloughed off. similar applications of HMB3 to human skin (0.4 ml/100 cm² for 25 days) failed to produce disagreeable subjective sensations (itching, burning, etc.) or any pathological changes (dryness, scaling, hyperemia, or pigmentation).

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USSR

UDC 576.852.15.095.4.088.8

ASLANYAN, R. R., TUL'SKIY, S. V., POZHARITSKAYA, L. M., and LAPTEVA, Ye. A.,
Institute of Microbiology, Academy of Sciences USSR, and Chair of Biophysics,
Physics Faculty, Moscow State University imeni M. V. Lomonosov

"Inhibition of Germination of Actinomycete Spores in a Constant Magnetic Field"

Moscow, Mikrobiologiya, Vol 42, No 3, 1973, pp 556-558

Abstract: Actinomycete spores were exposed to a constant magnetic field of 10,000 oersted, generated by a DC-powered electromagnet with an interpole distance of 25-30 mm. *Thermoact. vulgaris* 136 spores prepared as a suspension in a nutrient medium (opt. dens. 0.2) on glass slides were exposed to the magnetic field for 1.5 hr at 55°C, while those prepared as an aqueous suspension (opt. dens. 0.2) in test tubes were kept in the magnetic field for the same period but at room temperature. *Act. streptomycini* spores similarly prepared on slides were exposed for 5.5 hr at 28°C and those in test tubes for 1.5 hr at room temperature. Thirty minutes after completion of exposure, the spores were planted on a suitable medium and allowed to germinate for 1.5 hr at 55 and 28°C. On the whole, the number of germinating spores in the experimental samples was 6% lower than in control samples. Among *Thermoact. vulgaris*, the proportion of germinating spores was 46.5% in experimental vs. 55% in 1/2

USSR

ASLANYAN, R. R., et al., Mikrobiologiya, Vol 42, No 3, 1973, pp 556-558

control slides and 69% in experimental vs. 72% in control tubes. Among Act. streptomycini, the corresponding figures were 47% vs. 54.5% and 44% vs. 49%. Though the mechanism of action remains to be elucidated, it is concluded that a constant magnetic field inhibits germination, possibly by preventing a reduction in the native paramagnetism of the spores.

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USSR

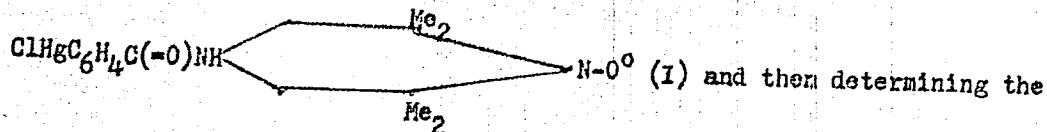
UDC 576.852.15.094,81,088,8

POZHARITSKAYA, L. M., KOL'TOVER, V. K., AGRE, N. S., and KALAKUTSKIY, L. V.,
 Institute of Microbiology and Institute of Chemical Physics, Academy of
 Sciences USSR

"Activation of Spores of Thermoactinomyces vulgaris 2681 as Indicated by
 the Spin Tracer Method"

Moscow, Mikrobiologiya, Vol 40, No 6, Nov/Dec 71, pp 1110-1111

Abstract: Activation of spores of the actinomycete Thermoactinomyces vulgaris 2681, just like that of bacterial spores, is accompanied by the conversion of disulfide groups into thiol groups. In experiments on a suspension of nonactivated spores of T. vulgaris 2681 in glycerol with 14% sprouting spores and one of activated spores of this actinomycete in water with 90% sprouting spores, the relationship between activation and the formation of thiol groups was demonstrated by reacting these groups with the stable iminoxyl radical



EPR spectrum of the radical. The methods of cultivation and preparation of the suspensions have been described. Radical I was introduced into the

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USSR

POZHARITSKAYA, L. M., et al., *Mikrobiologiya*, Vol 40, No 6, Nov/Dec 71, pp 1110-1111

suspension of activated spores from a water-alcohol solution and into that of nonactivated spores from a solvent that inhibits activation (glycerol or octane). The EPR spectrum corresponding to the suspension of activated spores exhibited two signals, one with $\tau \sim 10^{-8}$ sec and another with $\tau = 3 \times 10^{-9}$ sec, that was associated with radicals whose rotary motion was inhibited to a considerably lesser extent. Evidently two types of HS groups with different accessibility to radical I were present in the protein wall of the activated spores. The spectrum for the suspension of non-activated spores consisted of a triplet signal to which corresponded a rotary motion of I with $\tau = 2 \times 10^{-8}$ sec. The intensity of this signal was 5-7 times lower than that of the signal with the more inhibited rotation in the spectrum for the suspension of activated spores. This indicated that activation was accompanied by a considerable increase in the number of HS groups.

2/2

General

USSR

POZHARITSKAYA, N., Biologist

"Hamadryads: Sounds, Facial Expressions, and Gestures"

Moscow, Nauka i Zhizn', No 7, Jul 70, pp 88-91

Abstract: The means of communication used by Hamadryads were studied at the Sukhumi Primate Center, using a camera, film, and a tape recorder. The language of the animals was found to comprise about 20 sounds, each of which served to carry specific information, such as the leader's warning of danger with directions to flee or adopt a defensive position. Other sounds indicate alarm on the part of animals separated from the herd, intraherd rituals of behavior, expressions of friendliness and pleasure, and obedience to the leader. In addition to sounds, poses, gestures, facial expressions, and body movements are highly important means of communication among animals. The leader of the herd uses threatening or disapproving glances to express anger or enforce discipline. Affability or indifference to a courting male may be expressed with the tail. By moving its ears, eyes, mouth, or facial muscles, animals express fear, displeasure, curiosity, indecision, anger, sadness, and other emotions. In combination with the 20 sounds, the facial expressions, gestures, and body movements are fully adequate for communication with friend or foe.

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UDC 531.31

POZHARITSKIY, G. K. (Moscow)

"Stability of the Equilibria of Mechanical Systems, Which Include a Flexible Inextensible Filament"

Moscow, Prikladnaya Matematika i Mekhanika, No 4, 1973, pp 647-658

Abstract: Consideration is given to the equilibrium of a mechanical system with a finite number of degrees of freedom, which includes a flexible inextensible filament, in a potential stable field of forces. An investigation is made of the variation of the potential energy of this system when the generalized coordinates of the system are deflected from an equilibrium position, and of the thread in a new equilibrium position which corresponds to fixed variations of the indicated coordinates. The conditions are indicated, at which a specific positiveness of the indicated variation of the potential energy guarantees the stability of equilibrium of the system. 1 figure. 5 references.

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Acc. Nr:

A/0045805

Abstracting Service:

CHEMICAL ABST.

Ref. Code:

WK 0000

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89425z β -Ureido acids and dihydrouracils. IX. Kinetics and mechanism of alkaline hydrolysis of dihydrouracils. Elagceva, Iva B.; Kurtcy, B. I.; Rozharliev, Ivan G. (Inst. Org. Chem., Sofia, Bulg.). J. Chem. Soc. B 1970, (2), 232-5 (Eng).
 The kinetics of alk. hydrolysis of dihydrouracils are of the first and second order in hydroxide ion, reverting to first (apparent zero) order at high alk. The reaction is general base-catalyzed. A mechanism is suggested involving reaction only of the unionized species with rate-detc. general base-catalysis by water and decompn. by hydroxide ion of the tetrahedral addn. intermediate changing to rate-detc. formation of the addn. intermediate at high alkalinities. RCGG

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UDC: 53.08+389.1: 613

TRESKUNOV, A.A. POZHAROV, A.V., DRUYAN, V.I. and
PROSKURNINA, N.N.

"Problems of Metrological Provision of Instruments for Biological
Aerosol Analysis"

Sb. Fiz. metody i vopr. metrol. biomed. izmereniy (Symposium on
Physics Methods and Biomedical Metrology Problems) Moscow, 1972,
pp 275-276 (from Referativnyy Zhurnal-Metrologiya i Izmeritel'naya
Tekhnika, No 8, 1972, Abstract No 8.32.1010 by V.S.K.)

Translation: Problems are considered of metrological provision of a
class of analytical instruments for detection and concentration measure-
ment of biological matters in air. Possibility of creating a dustmeter
for estimating the protein concentration in air is analysed. The study of
these problems showed the absence of methods and means for calibration,
inspection and certification of this class dustmeter. In order to graduate

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TRESKUNOV, A. A., et al., Sb. Fiz. metody i vopr. metrol. biomed. izmereniy, 1972, pp 275-276

the dustmeter dial it is necessary to develop methods of concentration measurement for pure protein aerosol mixtures and also of obtaining certification mixtures. At LF VNIIMP an aerosol biological indicator has been developed, whose operation is based on photometering specimens with precipitated solid phase of aerosol in two adjoining intervals of IK-spectrum region, one of which is selected by the wave length common to most proteins. The investigations having been conducted showed that to facilitate solution of metrological problems it is expedient to conduct itemized error estimation of IK-spectrophotometer (air sampler, optical and electronic systems).

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Acc. Nr:

AP0034207

Abstracting Service:
CHEMICAL ABST. 4-70

Ref. Code:

7AR 0078

71293v Determination of the degree of polymerization of ammonium polyphosphates by a potentiometric titration method. Kubasova, L. V.; ~~Bozhikova~~ ^{Bozhikova}, T. D. (USSR). *Zh. Neorg. Khim.* 1970, 15(1), 43-7 (Russ). The study was made by using a potentiometric titrn. with 0.1N Me.NOH in 2 atm. NH₃. On increasing the temp. from 300 to 400°, the av. d.p. of NH₄H₂PO₄ dehydration product changes from 12 to 56 P atoms in a chain. The shape of the potentiometric curve changed with the length of the polyphosphate chain. The low-mol.-wt. phosphates had two inflection points on the curve while the high-mol.-wt. phosphates had only one inflection point at pH 9. Apparently, in long polyphosphates, the highly charged anion on one end of a long chain does not affect the analogous anion on the other end of this chain.

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UDC 632.95

BRIKMAN, L. I., TSETLIN, V. M., ROGINSKAYA, Ye. Ya., ZHUK, Ye. B., VOLKOVA, A. P., VORONKINA, T. M., KLIMENCHUK, V. I., POZHARSKAY', Ye, B.

"Compound for Controlling Household Insects"

USSR Author's Certificate No 340384, filed 15 Feb 71, published 23 Jun 72
(from RZH-Khimiya, No 2 (II), Feb 73, Abstract No 2N486)

Translation: The compound for controlling cockroaches, clones and moths contains the following (in % by weight): γ -hexachlorocyclohexane 0.19%; DDT 1.71%; DDVF 0.6%; xylol 5%; a mixture of CF_2Cl_2 (freon-12) and $CFCl_3$ (freon-II) 55% and kerosene to 100%.

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BRIKMAN, L. I., TSETLIN, V. M., ROGINSKAYA, YE. YA., ZHUK, YE. B., KLIMENCHUK, V. I., POZHARSKAYA, YE. B., and VOLKOVA, A. P.

"Composition for the Control of Household Insects Specifically for Cockroaches and Bugs"

USSR Author's Certificate No 251515, filed 1 Dec 70, published 10 Oct 72 (from RZh-Khimiya, No 19, Oct 73, Abstract No 19N495 P)

Translation: To lower the toxicity of the preparation towards warm-blooded animals without lowering its effectiveness against household insects, pyrethrins are added to the aerosol preparation containing δ -GKhTsG [hexachlorocyclohexane -- HCCH]. The composition of such a preparation: δ -HCCH 0.21%, DDT 1.89%, pyrethrin extract containing δ 25% of the active material 0.42%, xylene 5.0%, a mixture of freon-12 and freon-11 55%, kerosene up to 100%.

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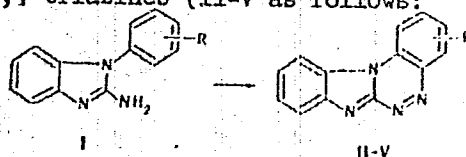
UDC 547.785.5.556.3

KOLODYAZHNAYA, S. N., SIMONOV, A. M., ZHELTIKOVA, N. N., and POZHARSKIY, A. F.,
Rostov State University, Rostov-on-Don

"Intramolecular Nitrogen Bonding in a Series of 1-Substituted 2-Aminobenzimidazols"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, 5, May 1973, pp 714-715

Abstract: Compounds of the type 1-aryl-2-aminobenzimidazol (I) form, in addition to the intermolecular bonds, intramolecular nitrogen bonding which occurs in the o-position of N-aryl radical and leads to the formation of dibenz [a,g] imidazo [2,1-C][1,2,4,] triazines (II-V as follows:



The ring closure occurs smoothly in concentrated H_3PO_4 ; the presence of H_2SO_4 results in the formation of 5- and 6-azobenzimidazols. A methyl group in the m-position on the N-aryl radical facilitates the ring closure. Elemental analysis, IR data, physical constants, and molecular weights are given.

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UDC 547.859.7:785.5:543.4.6

POZHARSKIY, A. F., KASHPAROV, I. S., ANDREICHIKOV, YU. P., BUZYAK, A. I.,
KONSTANTINCHENKO, A. A., and SIMONOV, A. M., Rostov-on-Don State University

"Heterocyclic Analogs of Pleiadiene. VII. Tautomerism of 2-Amino-derivatives
of Perimidine, Aceperimidine, and Their Imidazole Analogs"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 71, pp 807-813

Abstract: Analysis of the ionization constants, infrared and ultraviolet
spectral data and of quantum mechanical calculations showed that 2-aminoperi-
midines and 2-aminoaceperimidines show a greater tendency toward a tautomeric
equilibrium shift in the direction of the imino form than the 2-aminoderivatives
of 4,5-diphenylimidazole, benzimidazole, and angular or linear naphthimidazoles.
This tendency is believed to be connected with their π -electron structure.

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